Applicant: Michael Butters et al. Attorney's Docket No.: 06275-514US1 / 101315-1P US

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Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Previously Presented) A method for the preparation of a compound of formula (I) or a pharmaceutically acceptable salt thereof:

$$O = \bigvee_{N=1}^{NR^2R^3} \bigvee_{S=R^1}^{N} S = R^1$$
(I)

in which

 R^1 represents a C_3 - C_7 carbocyclic, C_1 - C_8 alkyl, C_2 - C_6 alkenyl or C_2 - C_6 alkynyl group, each of the groups being optionally substituted by one or more substituent groups independently selected from halogen atoms, $-OR^4$, $-NR^5R^6$, $-CONR^5R^6$, $-COOR^7$, $-NR^8COR^9$, $-SR^{10}$, $-SO_2R^{10}$, $-SO_2NR^5R^6$, $-NR^8SO_2R^9$ or a phenyl group, a naphthyl group, or a 5- or 6-membered heteroaryl group containing one or more heteroatoms selected from N, S, and O, wherein the phenyl group, the naphthyl group, and the 5- or 6-membered heteroaryl group are each optionally substituted by one or more substituents independently selected from halogen atoms, cyano, nitro, $-OR^4$, $-NR^5R^6$, $-CONR^5R^6$, $-COOR^7$, $-NR^8COR^9$, $-SR^{10}$, $-SO_2R^{10}$, $-SO_2NR^5R^6$, $-NR^8SO_2R^9$, $-C_1$ - $-C_6$ alkyl or trifluoromethyl groups;

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 R^2 and R^3 each independently represent a hydrogen atom, or a C_3 - C_7 carbocyclic, C_1 - C_8 alkyl, C_2 - C_6 alkenyl or C_2 - C_6 alkynyl group, the latter four groups may be optionally substituted by one or more substituent groups independently selected from:

- (a) halogen atoms, $-OR^4$, $-NR^5R^6$, $-CONR^5R^6$, $-COOR^7$, $-NR^8COR^9$, $-SR^{10}$, $-SO_2R^{10}$, $-SO_2NR^5R^6$, $-NR^8SO_2R^9$;
- (b) a 3-8 membered ring optionally containing one or more atoms selected from O, S, NR⁸ and itself optionally substituted by C₁-C₃-alkyl or halogen; or
- (c) a phenyl group, a naphthyl group, or a 5- or 6-membered heteroaryl group containing one or more heteroatoms selected from N, S, and O, wherein the phenyl group, the naphthyl group, and the 5- or 6-membered heteroaryl group are each optionally substituted by one or more substituents independently selected from halogen atoms, cyano, nitro, -OR⁴, -NR⁵R⁶, -CONR⁵R⁶, -NR⁸COR⁹, -SO₂NR⁵R⁶, -NR⁸SO₂R⁹, C₁-C₆ alkyl and trifluoromethyl groups; R⁴ represents hydrogen, C₁-C₆ alkyl or a phenyl group the latter two of which may be optionally substituted by one or more substituent groups independently selected from halogen atoms, phenyl, -OR¹¹ and -NR¹²R¹³

 R^5 and R^6 independently represent a hydrogen atom or a C_1 - C_6 alkyl or phenyl group the latter two of which may be optionally substituted by one or more substituent groups independently selected from halogen atoms, phenyl, $-OR^{14}$ and $-NR^{15}R^{16}$, $-CONR^{15}R^{16}$, $-NR^{15}COR^{16}$, $-SONR^{15}R^{16}$, $NR^{15}SO_2R^{16}$

or

R⁵ and R⁶ together with the nitrogen atom to which they are attached form a 4- to 7-membered saturated heterocyclic ring system optionally containing a further heteroatom selected from oxygen and nitrogen atoms, which ring system may be optionally substituted by one or more substituent groups independently selected from phenyl, -OR¹⁴, -COOR¹⁴, -NR¹⁵R¹⁶, -CONR¹⁵R¹⁶, -NR¹⁵COR¹⁶, -SONR¹⁵R¹⁶, NR¹⁵SO₂R¹⁶ or C₁-C₆ alkyl, itself optionally substituted by one or more substituents independently selected from halogen atoms and -NR¹⁵R¹⁶ and -OR¹⁷ groups;

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 R^{10} represents a hydrogen atom or a C_1 - C_6 -alkyl or a phenyl group, the latter two of which may be optionally substituted by one or more substituent groups independently selected from halogen atoms, phenyl, $-OR^{17}$ and $-NR^{15}R^{16}$; and

each of R^7 , R^8 , R^9 , R^{11} , R^{12} , R^{13} , R^{14} R^{15} , R^{16} , R^{17} independently represents a hydrogen atom or a C_1 - C_6 alkyl, or a phenyl group;

which method comprises contacting

$$O = \bigvee_{N = 1}^{L} \bigvee_{N = 1}^{N} S - R^{1}$$

$$IV$$

wherein L is a leaving group

with a thiazole nitrogen protecting group reagent under appropriate reaction conditions to form a compound of the formula

$$O = \bigvee_{\substack{N \\ PG}} \bigvee_{S-R^1} \bigvee_{III}$$

wherein PG is a protecting group,

reacting the compound of formula III with an amine of formula HNR^2R^3

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to form a compound of formula

$$O = \bigvee_{N=1}^{NR^2R^3} \bigvee_{S=R^1}^{N} S = R^1$$

and deprotection of the compound of formula II to give a compound of the formula I, and simultaneous or sequential conversion to a pharmaceutically acceptable salt thereof.

- 2. (Original) A method as claimed in claim 1 and wherein R¹ represents an optionally substituted benzyl group.
- 3. (Previously Presented) A method as claimed in claim 1 and wherein one of R^2 or R^3 is hydrogen and the other is C_1 - C_8 alkyl substituted by hydroxy and one or more methyl or ethyl groups.
- 4. (Previously Presented) A method as claimed in claim 1 for the preparation of a compound of the formula Ia

$$O = \bigvee_{\substack{\mathsf{N} \\ \mathsf{N} \\ \mathsf{H}}} \mathsf{Rx} \mathsf{Rx}$$

$$\mathsf{CH}_3$$

$$\mathsf{Rx} \mathsf{Rx}$$

$$\mathsf{CH}_3$$

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wherein each R^X is independently selected from hydrogen, a C_{1-4} alkyl group optionally substituted by hydroxy, amino, $-O-C_{1-4}$ alkyl, $-S-C_{1-4}$ alkyl, $-N-C_{1-4}$ alkyl, $-N+C_{1-4}$ alkyl,

- 5. (Previously Presented) A method as claimed in claim 4 wherein each R^X is independently selected from hydrogen and hydroxymethyl, provided that both R^X are not hydrogen.
- 6. (Previously Presented) A compound of the formula

$$O = \bigvee_{N=1}^{NR^2R^3} \bigvee_{S=R^1}^{NR^2R^3} \bigvee_$$

or a pharmaceutically acceptable salt thereof and

 R^1 represents a C_3 - C_7 carbocyclic, C_1 - C_8 alkyl, C_2 - C_6 alkenyl or C_2 - C_6 alkynyl group, each of the groups being optionally substituted by one or more substituent groups independently selected from halogen atoms, $-OR^4$, $-NR^5R^6$, $-CONR^5R^6$, $-COOR^7$, $-NR^8COR^9$, $-SR^{10}$, $-SO_2R^{10}$, $-SO_2NR^5R^6$, $-NR^8SO_2R^9$ or a phenyl group, a naphthyl group, or a 5- or 6-membered heteroaryl group containing one or more heteroatoms selected from N, S, and O, wherein the phenyl group, the naphthyl group, and the 5- or 6-membered heteroaryl group are each optionally substituted by one or more substituents independently selected from halogen atoms, cyano, nitro, $-OR^4$, $-NR^5R^6$, $-CONR^5R^6$, $-COOR^7$, $-NR^8COR^9$, $-SR^{10}$, $-SO_2R^{10}$, $-SO_2NR^5R^6$, $-NR^8SO_2R^9$, $-C_1-C_6$ alkyl or trifluoromethyl groups;

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 R^2 and R^3 each independently represent a hydrogen atom, or a C_3 - C_7 carbocyclic, C_1 - C_8 alkyl, C_2 - C_6 alkenyl or C_2 - C_6 alkynyl group, the latter four groups may be optionally substituted by one or more substituent groups independently selected from:

- (a) halogen atoms, $-OR^4$, $-NR^5R^6$, $-CONR^5R^6$, $-COOR^7$, $-NR^8COR^9$, $-SR^{10}$, $-SO_2R^{10}$, $-SO_2NR^5R^6$, $-NR^8SO_2R^9$;
- (b) a 3-8 membered ring optionally containing one or more atoms selected from O, S, NR^8 and itself optionally substituted by C_1 - C_3 -alkyl or halogen; or
- (c) a phenyl group, a naphthyl group, or a 5- or 6-membered heteroaryl group containing one or more heteroatoms selected from N, S, and O, wherein the phenyl group, the naphthyl group, and the 5- or 6-membered heteroaryl group are each optionally substituted by one or more substituents independently selected from halogen atoms, cyano, nitro, -OR⁴, -NR⁵R⁶, -CONR⁵R⁶, -NR⁸COR⁹, -SO₂NR⁵R⁶, -NR⁸SO₂R⁹, C₁-C₆ alkyl and trifluoromethyl groups; R⁴ represents hydrogen, C₁-C₆ alkyl or a phenyl group the latter two of which may be optionally substituted by one or more substituent groups independently selected from halogen atoms, phenyl, -OR¹¹ and -NR¹²R¹³

 R^5 and R^6 independently represent a hydrogen atom or a C_1 - C_6 alkyl or phenyl group the latter two of which may be optionally substituted by one or more substituent groups independently selected from halogen atoms, phenyl, $-OR^{14}$ and $-NR^{15}R^{16}$, $-CONR^{15}R^{16}$, $-NR^{15}COR^{16}$, $-SONR^{15}R^{16}$, $NR^{15}SO_2R^{16}$

or

R⁵ and R⁶ together with the nitrogen atom to which they are attached form a 4- to 7-membered saturated heterocyclic ring system optionally containing a further heteroatom selected from oxygen and nitrogen atoms, which ring system may be optionally substituted by one or more substituent groups independently selected from phenyl, -OR¹⁴, -COOR¹⁴, -NR¹⁵R¹⁶, -CONR¹⁵R¹⁶, -NR¹⁵COR¹⁶, -SONR¹⁵R¹⁶, NR¹⁵SO₂R¹⁶ or C₁-C₆ alkyl, itself optionally substituted by one or more substituents independently selected from halogen atoms and -NR¹⁵R¹⁶ and -OR¹⁷ groups;

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 R^{10} represents a hydrogen atom or a C_1 - C_6 -alkyl or a phenyl group, the latter two of which may be optionally substituted by one or more substituent groups independently selected from halogen atoms, phenyl, $-OR^{17}$ and $-NR^{15}R^{16}$;

each of R^7 , R^8 , R^9 , R^{11} , R^{12} , R^{13} , R^{14} R^{15} , R^{16} , R^{17} independently represents a hydrogen atom or a C_1 - C_6 alkyl, or a phenyl group; and

PG is a protecting group.

7. (Previously Presented) A compound of the formula

$$O = \bigvee_{\substack{N \\ PG}} \bigvee_{S=R^1} \bigvee_{III}$$

or a pharmaceutically acceptable salt thereof and wherein

 R^1 represents a C_3 - C_7 carbocyclic, C_1 - C_8 alkyl, C_2 - C_6 alkenyl or C_2 - C_6 alkynyl group, each of the groups being optionally substituted by one or more substituent groups independently selected from halogen atoms, $-OR^4$, $-NR^5R^6$, $-CONR^5R^6$, $-COOR^7$, $-NR^8COR^9$, $-SR^{10}$, $-SO_2R^{10}$, $-SO_2NR^5R^6$, $-NR^8SO_2R^9$ or a phenyl group, a naphthyl group, or a 5- or 6-membered heteroaryl group containing one or more heteroatoms selected from N, S, and O, wherein the phenyl group, the naphthyl group, and the 5- or 6-membered heteroaryl group are each optionally substituted by one or more substituents independently selected from halogen atoms, cyano, nitro, $-OR^4$, $-NR^5R^6$, $-CONR^5R^6$, $-COOR^7$, $-NR^8COR^9$, $-SR^{10}$, $-SO_2R^{10}$, $-SO_2NR^5R^6$, $-NR^8SO_2R^9$, $-C_1$ - $-C_6$ alkyl or trifluoromethyl groups;

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 R^4 represents hydrogen, C_1 - C_6 alkyl or a phenyl group the latter two of which may be optionally substituted by one or more substituent groups independently selected from halogen atoms, phenyl, $-OR^{11}$ and $-NR^{12}R^{13}$

 R^5 and R^6 independently represent a hydrogen atom or a C_1 - C_6 alkyl or phenyl group the latter two of which may be optionally substituted by one or more substituent groups independently selected from halogen atoms, phenyl, -OR¹⁴ and -NR¹⁵R¹⁶, -CONR¹⁵R¹⁶, -NR¹⁵COR¹⁶, -SONR¹⁵R¹⁶, NR¹⁵SO₂R¹⁶

or

R⁵ and R⁶ together with the nitrogen atom to which they are attached form a 4- to 7-membered saturated heterocyclic ring system optionally containing a further heteroatom selected from oxygen and nitrogen atoms, which ring system may be optionally substituted by one or more substituent groups independently selected from phenyl, -OR¹⁴, -COOR¹⁴, -NR¹⁵R¹⁶, -CONR¹⁵R¹⁶, -NR¹⁵COR¹⁶, -SONR¹⁵R¹⁶, NR¹⁵SO₂R¹⁶ or C₁-C₆ alkyl, itself optionally substituted by one or more substituents independently selected from halogen atoms and – NR¹⁵R¹⁶ and -OR¹⁷ groups;

 R^{10} represents a hydrogen atom or a C_1 - C_6 -alkyl or a phenyl group, the latter two of which may be optionally substituted by one or more substituent groups independently selected from halogen atoms, phenyl, $-OR^{17}$ and $-NR^{15}R^{16}$;

each of R^7 , R^8 , R^9 , R^{11} , R^{12} , R^{13} , R^{14} R^{15} , R^{16} , R^{17} independently represents a hydrogen atom or a C_1 - C_6 alkyl, or a phenyl group;

L is a leaving group; and

PG is a protecting group.

8. (Cancelled)

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9. (Previously Presented) A compound of the formula

$$\begin{array}{c}
0 \\
S \\
N \\
N
\end{array}$$
 $\begin{array}{c}
N \\
S \\
N
\end{array}$
 $\begin{array}{c}
N \\
V
\end{array}$

or a pharmaceutically acceptable salt thereof and wherein

 R^1 represents a C_3 - C_7 carbocyclic, C_1 - C_8 alkyl, C_2 - C_6 alkenyl or C_2 - C_6 alkynyl group, each of the groups being optionally substituted by one or more substituent groups independently selected from halogen atoms, $-OR^4$, $-NR^5R^6$, $-CONR^5R^6$, $-COOR^7$, $-NR^8COR^9$, $-SR^{10}$, $-SO_2R^{10}$, $-SO_2NR^5R^6$, $-NR^8SO_2R^9$ or a phenyl group, a naphthyl group, or a 5- or 6-membered heteroaryl group containing one or more heteroatoms selected from N, S, and O, wherein the phenyl group, the naphthyl group, and the 5- or 6-membered heteroaryl group are each optionally substituted by one or more substituents independently selected from halogen atoms, cyano, nitro, $-OR^4$, $-NR^5R^6$, $-CONR^5R^6$, $-COOR^7$, $-NR^8COR^9$, $-SR^{10}$, $-SO_2R^{10}$, $-SO_2NR^5R^6$, $-NR^8SO_2R^9$, $-C_1$ - $-C_6$ alkyl or trifluoromethyl groups;

 R^4 represents hydrogen, C_1 - C_6 alkyl or a phenyl group the latter two of which may be optionally substituted by one or more substituent groups independently selected from halogen atoms, phenyl, $-OR^{11}$ and $-NR^{12}R^{13}$

 R^5 and R^6 independently represent a hydrogen atom or a C_1 - C_6 alkyl or phenyl group the latter two of which may be optionally substituted by one or more substituent groups independently selected from halogen atoms, phenyl, -OR¹⁴ and -NR¹⁵R¹⁶, -CONR¹⁵R¹⁶, -NR¹⁵COR¹⁶, -SONR¹⁵R¹⁶, NR¹⁵SO₂R¹⁶

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 R^5 and R^6 together with the nitrogen atom to which they are attached form a 4- to 7-membered saturated heterocyclic ring system optionally containing a further heteroatom selected from oxygen and nitrogen atoms, which ring system may be optionally substituted by one or more substituent groups independently selected from phenyl, $-OR^{14}$, $-COOR^{14}$, $-NR^{15}R^{16}$, $-CONR^{15}R^{16}$, $-NR^{15}COR^{16}$, $-SONR^{15}R^{16}$, $NR^{15}SO_2R^{16}$ or C_1 - C_6 alkyl, itself optionally substituted by one or more substituents independently selected from halogen atoms and $-NR^{15}R^{16}$ and $-OR^{17}$ groups;

 R^{10} represents a hydrogen atom or a C_1 - C_6 -alkyl or a phenyl group, the latter two of which may be optionally substituted by one or more substituent groups independently selected from halogen atoms, phenyl, $-OR^{17}$ and $-NR^{15}R^{16}$; and each of R^7 , R^8 , R^9 , R^{11} , R^{12} , R^{13} , R^{14} R^{15} , R^{16} , R^{17} independently represents a hydrogen atom or a C_1 - C_6 alkyl, or a phenyl group.

10. (Cancelled)